

AMENDMENTS TO THE CLAIMS

1-62. (Canceled).

63. (Currently Amended) A method for simultaneously exposing an array of test compounds to a detector layer of physiologically viable cells, comprising:

- (a) providing an array of test compounds, wherein the test compounds are disposed on a support;
- (b) providing a porous membrane, wherein the porous membrane is constructed of a non-absorbent material with pores of regular and defined diameter which traverse the membrane directly from the upper to the lower side; *to provide orthogonal capillarity for diffusion of each test compound*
- (c) bringing the array of test compounds in close apposition with the detector layer so that the porous membrane is in contact with the a liquid layer surrounding the detector layer and the porous membrane is in contact with the array of test compounds thereby allowing diffusion of the test compounds through the porous membrane to the detector layer.

64. (Currently Amended) A method for simultaneously exposing an array of test compounds to a detector layer of physiologically viable cells, comprising:

- (a) providing an array of test compounds, wherein the test

compounds are disposed on a porous membrane, wherein the porous membrane is constructed of a non-absorbent material with pores of regular and defined diameter which traverse the membrane directly from the upper to the lower side;

- (b) bringing the array of test compounds in close apposition with the detector layer so that the porous membrane is in contact with a liquid layer surrounding the detector layer thereby allowing diffusion of the test compounds through the porous membrane to the detector layer.

65. (Currently Amended) A method for simultaneously exposing an array of test compounds to a detector layer of physiologically viable cells, wherein the cells are grown on a porous membrane, wherein the porous membrane is constructed of a non-absorbent material with pores of regular and defined diameter which traverse the membrane directly from the upper to the lower side, comprising:

- (a) providing an array of test compounds, wherein the test compounds are disposed on a support;
- (b) bringing the array of test compounds in close apposition with the detector layer so that the porous membrane is in contact with the array of test compounds thereby allowing diffusion of the test compounds through the porous membrane to the detector layer of physiologically viable cells.

66. (Canceled).

67. (Previously Presented) The method according to any of claims 63 or 65, wherein the support is a non-porous substrate.

68. (Previously Presented) The method according to any of claims 63, 64 or 65, wherein the physiologically viable cells form a monolayer.

69. (Previously Presented) The method according to any of claims 63, 64 or 65, wherein the physiologically viable cells are supported by an optically clear substrate.

70. (Canceled).

71. (Previously Presented) The method according to any of claims 63, 64 or 65, wherein the detector layer is held stationary in the field of view of an optical detector and the array of test compounds is moved into contact with said detector layer during the course of measurement.

72. (Previously Presented) The method according to any of claims 63, 64 or 65, wherein the array of test compounds is held

stationary in the field of view of an optical detector and the detector layer is moved into contact with said array of test compounds during the course of measurement.

73. (Previously Presented) The method according to any of claims 63, 64 or 65, wherein the array of test compounds is generated on the support by combinatorial chemistry.

74. (Currently Amended) A method for screening test compounds for bioactivity by simultaneously exposing an array of test compounds to a detector layer of physiologically viable cells, comprising:

- (a) providing an array of test compounds, wherein each compound is disposed on a support;
- (b) providing a porous membrane, wherein the porous membrane is constructed of a non-absorbent material with pores of regular and defined diameter which traverse the membrane directly from the upper to the lower side; *same*
- (c) bringing the array of test compounds in close apposition with the detector layer so that the porous membrane is in contact with ~~the~~ a liquid layer surrounding the detector layer and the porous membrane is in contact with the array of test compounds thereby allowing diffusion of the test compounds through the

porous membrane to the detector layer; and

- (d) detecting a response of the detector layer to the test compound.

75. (Currently Amended) A method for screening test compounds for bioactivity by simultaneously exposing an array of test compounds to a detector layer of physiologically viable cells, comprising:

- (a) providing an array of test compounds, wherein each compound is disposed on a porous membrane, wherein the porous membrane is constructed of a non-absorbent material with pores of regular and defined diameter which traverse the membrane directly from the upper to the lower side;
- (b) bringing the array of test compounds in close apposition with the detector layer so that the porous membrane is in contact with a liquid layer surrounding the detector layer thereby allowing diffusion of the test compounds through the porous membrane to the detector layer; and
- (c) detecting a response of the detector layer to the test compound.

76. (Currently Amended) A method for screening test compounds for bioactivity by simultaneously exposing an array of test

compounds to a detector layer of physiologically viable cells wherein the cells are grown on the porous membrane, wherein the porous membrane is constructed of a non-absorbent material with pores of regular and defined diameter which traverse the membrane directly from the upper to the lower side, comprising:

- (a) providing an array of test compounds;
- (b) bringing the array of test compounds in close apposition with the detector layer so that the porous membrane is in contact with the array of test compounds thereby allowing diffusion of the test compounds through the porous membrane to the detector layer; and
- (c) detecting a response of the detector layer to the test compound.

77. (Canceled).

78. (Previously Presented) The method according to any of claims 74, 75 or 76, wherein the response is recorded by a sequence of images.

79. (Previously Presented) The method according to any of claims 74, 75 or 76, wherein the detected response is a change in a luminescence property of the physiologically viable cells in the detector layer.

80. (Previously Presented) The method according to any of claims 74, 75 or 76, wherein the detected response is a change in a fluorescence property of the physiologically viable cells in the detector layer.

81. (Previously Presented) The method according to any of claims 74 or 76, wherein the support is a non-porous substrate.

82. (Previously Presented) The method according to any of claims 74, 75 or 76, wherein the physiologically viable cells form a monolayer.

83. (Previously Presented) The method according to any of claims 74, 75 or 76, wherein the physiologically viable cells are supported by an optically clear substrate.

84. (Canceled).

85. (Previously Presented) The method according to any of claims 74, 75 or 76, wherein the detector layer is held stationary in the field of view of an optical detector and the array of test compounds is moved into contact with said detector layer during the course of measurement.

86. (Previously Presented) The method according to any of claims 74, 75 or 76, wherein the array of test compounds is held stationary in the field of view of an optical detector and the detector layer is moved into contact with said array of test compounds during the course of measurement.

87. (Previously Presented) The method according to any of claims 74, 75 or 76, wherein the array of test compounds is generated on the support by combinatorial chemistry.